

ABSTRACT OF THE DISCLOSURE

The present invention provides a high brightness color selective light modulator (CSLM) formed by a polarization modulator positioned between two retarder stacks. The modulator changes the apparent orientation of one retarder stack relative to the other so that, in a first switching state of the modulator the two retarder stacks cooperate in filtering the spectrum of input light, and in a second switching state the two retarder stacks complement each other, yielding a neutral transmission spectrum. Two or more CSLM stages can be used in series, each stage providing independent control of a primary color. One preferred embodiment eliminates internal polarizers between CSLM stages, thereby providing an additive common-path full-color display with only two neutral polarizers. Hybrid filters can be made using the CSLMs of this invention, in combination with other active or passive filters. The CSLMs of this invention can be used in many applications, particularly in the areas of recording and displaying color images. They can be arranged in a multi pixel array by pixelating the active elements, and can be implemented as color filter arrays, using patterned passive retarders rather than active polarization modulators.